study examined only the predictive power of the 1-stage DCF model, and made no attempt to compare the *relative* predictive power of the 1-stage and 3-stage models. 12 Tr. 3533:20-3534:8.

During his cross-examination, Dr. Vander Weide also volunteered a citation to one more recent article: 12 Tr. 3492 (referring to David A. Gordon, Myron J. Gordon, and Lawrence I. Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management* (Spring 1989) at 50-55). The article contradicts, rather than supports, Dr. Vander Weide's claims. Gordon *et al.* found that growth rates predicted by analysts were useful for determining the DCF yield only on stable utility company stocks, and had little or no predictive power for industrial company stocks. These results are more consistent with the findings of other leading authorities cited in Mr. Hirshleifer's testimony: for companies with stable growth at rates comparable to or less than the growth rate of the economy, *such as highly-regulated utility companies in the Gordon et al. study period of 1984-1986,* the use of a single-stage model would not be unreasonable. Industrial companies, however, which have market expectations of a wide array of non-constant growth rates over time, do not lend themselves well to the long-term assumption of I/B/E/S growth rates.[58]

The regression analyses that Dr. Vander Weide has performed himself as "tests of reasonableness" in the later stages of this case border on the frivolous. On pages 71-75 of his rebuttal testimony, Dr. Vander Weide "proves" through a series of regression analyses that the cost of capital values generated by the three-stage DCF model have a negative correlation with several purported measures of risk. The assumptions that Dr. Vander Weide made to reach these results would embarrass a first-year graduate student. *See* AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 75-83 (discussing methodological errors).

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[58] Objections Of AT&T And WorldCom To Verizon Response To Staff Record Request For Literature Comparing The Accuracy Of One-Stage Vs. Multi-Stage DCF Models (filed Oct. 18, 2001) at 10-11.

The further regressions submitted by Verizon in its December 10 "response" to Staff's record request for citations to literature concerning the relative merits of the one-stage and three-stage DCF models are no more probative. According to Verizon, the regressions show that the growth rates used in the one-stage DCF model correlates better with the price/earnings ratios of individual companies in the DCF sample than do the growth rates used in Mr. Hirshleifer's three-stage DCF. This claim is absurd. The growth assumptions tested in the regressions are single-stage, not multistage; the regressions use a linear function form to test a nonlinear economic relationship; the equations use inappropriate betas as risk proxies for the true cost of equity; and other, equally plausible regressions of the same data produce results opposite to those claimed by Dr. Vander Weide.[59]

Dr. Vander Weide's failure to cite any credible research that supports the use of a one-stage DCF model for companies with above-average short-term growth rates is unsurprising. The overwhelming consensus of scholars and practitioners is that the multi-stage DCF model reflects actual investor expectations far better.[60]

4. The Relevant Risk Of Verizon's UNE Business Is Low.

Another major area of dispute among the parties involves the level of risk to be assumed in estimating the cost of capital. The assumed level of risk affects the estimated cost of capital in several ways: (1) the choice of companies for the DCF equity comparison group; (2)

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[59] *Id.* at 4-17.

[60] *See* AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 12-17 (discussing scholarly literature). Other literature not cited therein include Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 2001 Yearbook*, at 49-50; Shannon P. Pratt, *Cost of Capital: Estimation and Applications* 116-117 (1998); and Bradford Cornell, "Alternate Approaches Available for DCF Method," *Natural Gas* 13-17 (November 1994).

the cost of debt; (3) the optimal debt/equity ratio; and (4) the appropriate risk premium for a CAPM equity analysis.

In the 1996-97 UNE rate litigation, the Virginia SCC, like most other state commissions, found that the relevant risk is low because Verizon, for the foreseeable future, is unlikely to face significant competition in supplying UNEs at wholesale. *Local Competition Order* ¶ 702; *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 240-241 (D.Del. 2000). In the present case, Verizon seeks to overcome these findings on two alternative grounds. First, Verizon asserts that consistency with the TELRIC standard requires the Commission to presume, as a matter of law, that the business of supplying UNEs at wholesale has a high degree of competitive risk. Second, Verizon asserts that the business of supplying UNEs is likely to be risky in fact. Neither claim is well founded. We respond to each in turn.

a. The TELRIC Standard Does Not Require The Commission To Adopt The Legal Fiction That The Business Of Supplying Unes Will Be Highly Risky.

Dr. Vander Weide and other Verizon witnesses insist that, regardless of whether Verizon *in fact* is likely to face effective competition for the business of supplying UNEs at wholesale, the *Local Competition Order* requires the Commission to *assume* that such competition will occur. Verizon reasons that, because the TELRIC methodology seeks to replicate the *costs* of a firm in an effectively competitive market, one must also assume that the business of supplying UNEs faces a very high degree of competitive risk.[61] Verizon's construction of the *Order* is at odds with its language, has been rejected by the courts and disavowed by Verizon itself, cannot be implemented with available data, and—if it could be

[61] Verizon Exh. 104 (Vander Weide Dir.) at 8-10, 26-34; Verizon Exh. 112 (Vander Weide Reb.) at 3-4; Verizon Exh. 118 (Vander Weide Surreb.) at 2-3, 19-24; 12 Tr. 3434-35, 3474-75, 3477-79, 3547 (Vander Weide); *accord*, Verizon Exh. 101 (Shelanski Dir.) at 30-31; VERIZON Exh. 108 (Tardiff Reb.) at 55-57.

implemented—would require the assumption of a lower, not higher, degree of competitive risk than Verizon now faces. The TELRIC standard does not require the Commission to adopt the legal fiction Verizon will face more competition than is plausible for the foreseeable future.

First, Verizon's interpretation of the *Local Competition Order* ignores both the language and underlying structure of the *Order* itself. Paragraph 702 of the *Order* makes clear that the incumbent LECs bear the burden of "demonstrating with specificity" the competitive risks they will actually face:

> Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and *incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. These elements generally are bottleneck, monopoly services that do not now face significant competition.* We recognize that incumbent LECs are likely to face increased risks given the overall increases in competition in this industry, which generally *might* warrant an increased cost of capital, *but note that, earlier this year, we instituted a preliminary inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt.* On the basis of the current record, we decline to engage in a time-consuming examination to determine a new rate of return, which may well require a detailed proceeding. *States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower level of cost of capital is warranted*, without that commission conducting a 'rate-of-return or other rate based proceeding.' *We note that the risk-adjusted cost of capital need not be uniform for all elements. We intend to re-examine the issue of the appropriate risk-adjusted cost of capital on an ongoing basis*, particularly in light of the state commissions' experiences in addressing this issue in specific situations.

Id. ¶ 702 (emphasis added). The factual inquiry mandated by the FCC, and the allocation of the burden of proof specified by the FCC for resolving any disputed facts, would be pointless if the FCC had meant for state commissions simply to *presume* the existence of intense

competition. *See* AT&T-WCOM Exh. 17 (Hirshleifer Reb.) at 5; 12 Tr. 3479 (Vander Weide) (conceding that, under his interpretation of ¶ 702, the parties and the Commission are "wasting our time" by "litigating over what competition Verizon actually faces").

Verizon's interpretation is also contradicted by the reference in the first sentence of ¶ 702 to "the risks they *face*." *Id.* (emphasis added). Verizon's parsing of the *Local Competition Order* would effectively transform the subject of inquiry into "the risks a firm *would* face *if* the market were *assumed* to be highly competitive." *See also* Tr. 3569:18-3570:6 (Vander Weide).

Confronted with the italicized portion of the first sentence of Paragraph 702 during cross-examination in the New Jersey UNE case, Dr. Vander Weide was unable to reconcile Paragraph 702 with his contorted reading of the *Local Competition Order*:

> Q. What is the point of the second half of the sentence if state commissions are obligated to assume in all events that the business is going to be highly competitive?
>
> A. Well, its – I don't know what – what the purpose is of the last half of the [sentence] is.[62]

Unsurprisingly, Dr. Vander Weide's reading of the *Local Competition Order* has been rejected repeatedly in UNE litigation. For example, the United States District Court in Delaware, upholding a 1997 decision of the Delaware PSC specifically rejecting Dr. Vander Weide's interpretation of the *Order* on behalf of Verizon-Delaware, reasoned as follows:

> Bell points to an apparent contradiction in assuming instantly competitive prices for network elements (even though no such competition now exists) but, in the context of determining cost of capital, assuming little competition and, consequently, low costs of capital. . . . The Telecommunications Act attempts to recreate the prices that a hypothetical efficient company would charge for its network elements and services in a competitive market. Indulging

[62] 2 New Jersey UNE Tr. (11/29/00) at 355-57 (Vander Weide) (reproduced in this docket as AT&T Exh. 110 and discussed at Tr. 3571-74).

> in this fiction, however, does not change the fact that ILECs like Bell do not face the same competitive risks as firms operating in a competitive market. Indeed, ILECs have had no competition for decades, and they will face little competition in the market for network elements in the near future. *See Local Competiton Order* ¶ 702, at 353. Therefore, in introducing competition in the local telephone market, it makes perfect sense to recreate competitive prices while acknowledging that the current lack of competition warrants reduced costs of capital.

Bell Atlantic-Delaware, Inc. v. McMahon, 80 F.Supp.2d 218 (D. Del. 2000) at 240 n. 19 (citation omitted) (emphasis added).

Verizon, unable to reconcile the legal fiction of a highly risk local telephone market with the unambiguous language of ¶ 702 of the *Local Competition Order*, argues instead that the FCC has repudiated ¶ 702. First, Verizon cites the Commission's recent Section 271 order in Massachusetts.[63] The competitive standard recognized in the Massachusetts decision, however, is the standard of ¶ 702 itself. In questioning the cost of capital established by the Massachusetts Department of Telecommunications and Energy, the FCC noted with concern the possibility that "this relatively high cost of capital is sufficiently justified by state-specific factors":

> Commenters have raised legitimate concerns regarding some of the inputs used by Massachusetts in calculating its loop rates. In particular, we note that the Massachusetts Department utilized a cost of capital of 12.16 percent. This is higher than the cost of capital that the Massachusetts Department has used in setting Verizon's local rates and substantially higher than the cost of capital employed by any of the other states in Verizon's region. AT&T questions whether there is any reason to believe that offering UNEs on a wholesale basis, where Verizon faces no competition, is riskier than offering retail service, where it now has

[63] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 5-6 (citing VERIZON Exh. 104 (Vander Weide Dir.) at 6).

> competition. *We question whether this relatively high cost of capital is sufficiently justified by state-specific factors.*[64]

If the TELRIC standard required adjudicators to assume the existence of intense competition as a matter of law, whether "state-specific factors" demonstrated a high degree of actual competition would be irrelevant. *See* AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 5-6.

Equally meretricious is Verizon's use of the reply brief filed by the FCC with the United States Supreme Court earlier this year in the Court's pending review of the *Local Competition Order*.[65] Seizing upon a single paragraph and footnote from the brief, Verizon witnesses Vander Weide and Shelanski proclaim that the FCC has "repudiated" ¶ 702.[66] The notion the brief did so, or otherwise adopted a more extravagant cost of capital standard for UNE litigation, turns the brief on its head.

The carryover paragraph on pages 11-12 of the brief makes the unexceptionable point that state commissions may (and, indeed, must) depart from their traditional cost-of-capital determinations "when incumbents show that those determinations do not comply with that standard." Nothing in the paragraph, or any other part of the brief, suggests that the FCC has abandoned ¶ 702 as the standard governing this inquiry. To the contrary, the FCC, in the cited paragraph, cites ¶ 702 *twice*.

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[64] FCC Memorandum Opinion and Order, *In the Matter of Application of Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions) And Verizon Global Networks Inc., For Authorization to Provide In-Region, InterLATA Services in Massachusetts*, CC Docket No. 01-9, Adopted and released: April 16, 2001, ¶ 38, at 19-20 (footnotes omitted) (emphasis added).

[65] Reply Brief of FCC filed July 23, 2001, in *Verizon Comms. Inc. v. FCC,* Nos. 00-511, 2000 U.S. Brief 511.

[66] Verizon Exh. 112 (Vander Weide Reb.) at 19 (discussing FCC reply brief at 11-12 n. 8); Verizon Exh. 118 (Vander Weide Surreb.) at 14-15 & 22 (same); Verizon Exh. 110 (Shelanski Reb.) at 10 (same).

Footnote 8 to the carryover paragraph is no more helpful to Verizon. When its witnesses quote from the footnote, they invariably provide only the following excerpt: "an appropriate cost of capital determination takes into account not only existing competitive risks . . . but also risks associated with the regulatory regime to which a firm is subject."[67] The entire footnote, however, reads as follows:

> Moreover, an appropriate cost of capital determination takes into account not only existing competitive risks, as the FCC recently recognized (see Local Competition Order (para. 702), J.A. 395-396), but also risks associated with the regulatory regime to which a firm is subject. *That second consideration is, notwithstanding the incumbents' contrary suggestion (BellSouth Resp. Br. 30-32), implicit in any determination of the true economic cost of capital.* See generally *Represcribing the Authorized Rate of Return for Interstate Servs. of Local Exch. Carriers,* 5 F.C.C.R. 7007, 7521 (1990) (para. 120) ["*1990 Rate Represcription*"], aff'd sub nom. *Illinois Bell Tel. Co. v. FCC*, 988 F.2d 1254 (D.C. Cir. 1993).

Reply Brief of FCC, *supra,* at *12 n.8 (emphasis added). The portions omitted by Verizon are telling.

The parenthetical reference to "Local Competition Order (para. 702)" makes clear, once again, that the "existing competitive risks" to be analyzed are the risks of the competition that the incumbent carrier actually expects to face. And the discussion of *regulatory* risk in the balance of the footnote ("risks associated with the regulatory regime to which a firm is subject") amounts to a clear rejection of the hypothetical risk paradigm that Verizon espouses.

The Commission's parenthetical reference to "BellSouth Resp. Br. 30-32" alludes, of course, to pages 30-32 of the joint brief that Verizon, BellSouth, SBC and USTA sponsored on June 8, 2001, as respondents in the same Supreme Court case. In that portion of their joint brief, Verizon and its allies argued (just as Verizon argues here) that consistency with

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[67] *See* previous footnote.

the TELRIC standard requires regulatory commissions to "determine the cost of capital and depreciation expenses" by assuming that the supplier of UNEs would face the competitive risks of a "hypothetical" "perfectly competitive" or "hypercompetitive" market, rather than the competitive risks resulting from "actual market conditions." WCOM Exh. 101 (Responsive Brief of BellSouth *et al.* filed June 8, 2001, in *Verizon Comms. Inc. v. FCC,* Nos. 00-511, at 30-33). Verizon *et al.* also criticized the FCC for supposedly requiring state commissions to retain in UNE pricing decisions the depreciation schedules and cost of capital determinations that were set under prior historical-cost ratemaking regimes. *Id.*

Footnote 8, far from embracing the ILECs' fictional risk paradigm or the premium returns it supposedly warrants, makes clear that the appropriate regulatory risk premium to be included in the cost of capital in UNE rate cases will normally be zero. The second sentence of the footnote—the one that Verizon never quotes—drives the point home. Compensation for the "risks associated with the regulatory regime to which a firm is subject" is "implicit in *any* determination of the true economic cost of capital"—"*notwithstanding the incumbents' contrary suggestion.*" FCC Reply Br. at 12 n. 8 (emphasis added).

The final nail in the coffin is the FCC's citation at the end of footnote 8 to the *1990 Rate Represcription* proceeding. *Id.* In the 1990 proceeding, the FCC specifically rejected the incumbent LECs' arguments for an additive to the cost of capital (rate of return) to compensate for the risk that the FCC (or any other regulatory agency) might exclude prudent investments from a carrier's rate base. In declining to approve any such adjustment, the FCC explained:

> Nothing in the Constitution or in the Communications Act requires the agency to adjust the prescribed rate of return to take into account *the agency's policies regarding rate base disallowances.* Rather, the methodologies we employ to determine the appropriate rate of return already take into account *the FCC's approach to such disallowances.* Investors are presumably aware of our

> ratemaking procedures, including our treatment of plant that is not automatically included in the rate base, and take these procedures into account in establishing the price of the stock. *The risk of disallowance, including the disallowance of prudent investment, is one of many factors that investors consider in evaluating the riskiness of investment in a regulated enterprise. Thus, the rate of return prescription itself already takes into account the fact that the FCC generally disallows prudent investments that are not "used and useful" in providing service.*

1990 Rate Represcription, 5 FCC Rcd. at 7521 (¶ 120) (emphasis added). The U.S. Court of Appeals for the D.C. Circuit, affirming the FCC, recognized that the FCC had held only "that because investors are aware of its rate base policies, the agency's market-based methodologies for determining the rate of return will produce a rate high enough to compensate for that risk." *Illinois Bell Tel. Co. v. FCC, supra*, 988 F.2d at 1263.

The FCC's logic applies with equal force here. The FCC and state commissions have been setting UNE prices under the rubric of the *Local Competition Order*—and, in general, rejecting the inflated cost of capital measures proposed by Dr. Vander Weide—for nearly six years. The nature of these standards has been no secret to the industry and its investors. *See* 12 Tr. 3625-26 (state commissions have been sending "price signals" to potential entrants by setting purportedly TELRIC-compliant prices for UNEs since 1996). Whatever regulatory risks the FCC standards may create should be fully reflected in the returns demanded by investors, and no return additive for regulatory risk is warranted.

In this regard, Dr. Vander Weide's (and Verizon's) current interpretation of the *Local Competition Order* is starkly at odds with Verizon's characterization of the *Order* in the same Supreme Court proceedings earlier this year. The TELRIC standard, Verizon *et al.* informed the Court, "presumes that carriers in its fictional world of constant network replacement *would nonetheless continue to have the same cost of capital established for incumbents in the stable, low-risk monopoly system of the past.*" Brief of Petitioners Verizon

Communications Inc. *et al.* in *Verizon Communications Inc. v. FCC*, No. 00-511 (U.S. Apr. 9, 2001) at 10 (citing *Local Competition Order* ¶¶ 687-688, 702) (emphasis added). To overcome this presumption, Verizon adds, "incumbents" must "demonstrate with specificity that the business risks—defined exclusively in terms of facilities-based entry by competitors—justify any change in the rate of return." *Id.*

Verizon's current parsing of the *Order* is also contradicted by a recent report by National Economic Research Associates ("NERA"), the consulting firm that employes Verizon witnesses William Taylor and Timothy Tardiff. The NERA report states in part:

> In terms of the more general concept of incremental costs, TELRIC maintains the following specific assumptions.
>
> First, the business decision being modeled is that of a hypothetical local exchange carrier that offers unbundled elements to retail providers (possibly itself) at undifferentiated prices. Hence the increments in question are the total volume for the elements demanded by the retail providers.
>
> Second, the time horizon over which the ILEC offers the wholesale elements is assumed to be the longest of the long-run. Implicit in this definition are the assumptions that (1) the ILEC will effectively be a monopolist in the provision of network elements for the indefinite future and (2) competitors will need to obtain such elements to compete over this time frame.[68]

In fact, there is no legal inconsistency seeking to replicate the *costs* of an effectively competitive (or contestable) market while limiting *returns* to the levels needed to compensate the regulated firm for the risk it actually faces. In setting the cost of capital in this

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[68] *See* AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 22 (quoting from "An Economic Evaluation of Network Cost Models", NERA, August 7, 2000, Exhibit 408, State of New York Public Service Commission, *Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements,* Case 98-C-1357) (emphasis added).

proceeding, the Commission must adhere to the legal standard under which the return on invested capital corresponds to the risks associated with the business enterprise actually being undertaken. This standard is well-stated in the United States Supreme Court's decision in *Bluefield Water Works Improvement Co. v. PSC*, 262 U.S. 679 (1923), as follows:

> A public utility is entitled to such rates as will permit it to earn a return . . . equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.

Id. at 692-93. The Court reiterated the applicable standard in *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944), holding that "[t]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks." Hence, the level of costs that the TELRIC standard seeks to model is entirely distinct from the level of competitive risk that a TELRIC-regulated local monopoly like Verizon can expect to face. A regulator can set prices for a firm with monopoly power that replicate the costs and efficiencies of a firm in a competitive market without pretending that the monopolist will thereby face the risks and uncertainties of a competitive firm. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 21-22.

Even Verizon witness Dr. William Taylor has acknowledged this distinction. Testifying in the UNE proceeding in Virginia in 1997, Dr. Taylor dismissed the notion that forward-looking pricing methodologies require a departure from the traditional approach of determining the cost of capital in light of the *actual* competitive risks of the regulated enterprise. Dr. Taylor agreed that "it is not unheard of for regulators to set prices in noncompetitive markets that replicate the prices that would result from a competitive market." Moreover, he conceded, "it is possible for a regulatory standard which sets rates at competitive levels to coexist with an

environment in which *the regulated firm faces less competitive risks than a competitive firm would face. . .*"[69]

In any event, it is by no means clear that the assumption of a competitive market, even if required for consistency with the TELRIC standard, would entitle Verizon to a higher cost of capital than warranted by the competition that Verizon actually expects to face. Because no local telephone market is perfectly competitive or contestable, there are obviously no data points from which one could observe the returns demanded by investors in firms that participate in such markets. 12 Tr. 3627 (Hirshleifer).

In principle, however, the competitive risk faced by participants in the ideally competitive market whose performance the TELRIC standard seeks to mimic should be *lower*, not higher, than the risk that Verizon actually faces going forward. A market in which entry and exit are instantaneous, costless, frictionless, and without sunk costs is what economists call a perfectly contestable market.[70] In such a market, a firm that lost some or all of its customers to a new entrant could simply liquidate its investment and immediately exit the market. The risk that

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[69] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at p. 58 (quoting *Ex Parte to Determine Prices Bell Atlantic—Virginia, Inc. Is Authorized to Charge Competing Local Exchange Carriers in Accordance with the Telecommunications Act of 1996 and Applicable State Law, Virginia State Corporation Commission*, Case No. PUC970005, 2 Tr. (11/29/00) 580-81 (Taylor)).

[70] Tr. 3624-27 (Hirshleifer); *accord, Coal Rate Guidelines—Nationwide*, 1 I.C.C.2d 520, 528-29 (1983), *aff'd Consolidated Rail Corp. v. United States*, 812 F.2d 1444 (3rd Cir. 1987). "The notion of contestable markets offers a generalization of the notion of purely competitive markets, a generalization in which fewer assumptions need to be made to obtain the usual efficiency results. Using contestability theory, economists no longer need to assume that efficient outcomes occur only when there are large numbers of actively producing firms . . . *What drives contestability theory is the possibility of costlessly reversible entry.*" William J. Baumol, John C. Panzar and Robert D. Willig, *Contestable Markets And the Theory of Industry Structure* xiii (rev. ed. 1988) (emphasis added).

competition could strand some or all of the incumbent firm's sunk investment—i.e., the biggest business risk that actual firms face in actual markets—would be absent. *Id.*

In light of the above considerations, regulatory bodies that have adopted rate standards designed to replicate the performance of perfectly competitive or contestable markets (e.g., TELRIC and stand-alone cost ("SAC")) have *not* adopted the extravagant risk model that that Verizon proposes. Instead, those regulators have chosen to use cost of capital measures that reflect the forward-looking risks *actually* faced by the incumbent regulated monopolies.[71]

It is striking that Dr. Vander Weide, when asked to specify the level of competition dictated by consistency with the TELRIC standard, waffled. Tr. 3556-57. It could be anywhere on the continuum from atomistic competition to a duopoly, he added. *Id.* at 3554-56.

b. The Risk Actually Faced By Verizon In Supplying Unes In Virginia Is Likely To Remain Low For The Foreseeable Future.

Verizon's alternative claim that its business risk in supplying UNEs in Virginia will in fact be high is also unsupported. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 19-20, 25. First, the relevant risks are those of Verizon's wholesale business, not its retail local business.

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[71] *See Coal Rate Guidelines*, *supra*, 1 I.C.C.2d at 534-37 (implementing stand-alone cost test with cost of capital based on DCF or CAPM analyses of risks and capital costs of incumbent railroad carriers). In this regard, Verizon's reliance on the testimony and published attacks on the TELRIC standard by NERA economists such as Alfred Kahn, William Taylor and Timothy Tardiff is truly ironic. Throughout the 1980s and early 1990s, Dr. Kahn and other NERA economists were avid proponents of the stand-alone cost test as a constraint on the freight transportation rates charged by market-dominant railroads and energy pipelines. *See* 1 Kahn, *The Economics of Regulation* (1988 reprint) at xix-xx & nn. 7-8; A. Kahn, "Market Power Issues in Deregulated Industries," 60 *Antitrust L.J.* 857, 859-60 (1992). At no time did Dr. Kahn or his colleagues at NERA suggest that consistency with the instantaneous entry assumptions underlying the stand-alone cost test required a risk premium over the cost of capital determined by reference to the risks actually facing the incumbent regulated carriers.

Indeed, in *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 240-241 (D.Del. 2000), the court upheld the decision of the Delaware PSC to reject Dr. Vander Weide's cost of capital analysis in part because of his failure to distinguish between wholesale and retail risk:

> In assessing Bell's case for an elevated cost of equity, the Hearing Examiners criticized the testimony of Bell's expert, Dr. James Vander Weide. The Examiners noted that Vander Weide based his cost of equity on the risk associated with Bell's retail business instead of on the future demand for Bell's network elements that it will sell at *wholesale*. AT&T's expert, Bradford Cornell, also criticized Vander Weide's analysis as "ignor[ing] the critical fact that the business at hand in this proceeding is *not* local retail phone service that already exists, but rather the new business of leasing of network elements at *wholesale* for use in providing competitive phone services to an existing *retail* market." [citation omitted] The distinction between wholesale and retail is crucial.
>
> Retail competition is competition for the end user of telephone service. That sort of competition is not at issue when determining the risks associated with leasing unbundled network elements (*e.g.*, loops and switches) at wholesale. The risks associated with leasing "bottleneck" network elements at wholesale is less than that associated with competition for retail service. *See Local Competition Order* ¶ 702, at 353 (noting that network elements "generally are bottleneck, monopoly services that do not now face significant competition"). This is so because Bell often is the only provider of these network elements, and it is to Bell that new entrants must come to lease or purchase loops, switches, and other network elements. Thus, even if retail competition intensifies, Bell's prominence as a wholesale provider of network elements will remain largely unaffected—at least until new entrants build their own networks. [footnote omitted] Accordingly, the Hearing Examiners correctly rejected Vander Weide's testimony as impermissibly attributing the risks of retail competition to the competition in the sale of unbundled network elements. *See Local Competition Order* ¶ 691, at 348 (explaining that, "[o]nly those costs that are incurred in the provision of network elements in the long run shall be directly attributable to those elements").

In apparent response to criticisms of this kind, Dr. Vander Weide now advances the astonishing claim that the wholesale supply of UNEs is *riskier* than the downstream retail

business or the other businesses of telephone holding companies.[72] These arguments are frivolous.

The diversification of Verizon's parent company into wireless, internet and foreign services cannot possibly make the company less risky than a wholesale supplier of UNEs, however. The acquisition of systematically riskier businesses, which these are, can *never* reduce the overall risk of the aggregate enterprise.[73]

Likewise, Verizon's universal service obligations are irrelevant as a risk factor. The FCC and state commissions have developed, or are in the process of developing, explicit funding mechanisms to compensate carriers for the costs of their universal service obligations. In any event, universal service costs are not properly included in UNE prices. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 27-28.

Nor is any return premium warranted for "regulatory risk." The risk that Verizon invokes is that risk that the Commission will err by setting UNE prices below cost. But the Act requires that UNE prices cover forward-looking economic costs, and it is presumptuous for Verizon to assume that the Commission and the reviewing courts will abdicate their responsibilities under this section. *See id.* at 28-29.

The notion that the "operating leverage" makes Verizon's wholesale business risky is absurd: Verizon's wholesale business of supplying UNEs is a cash cow that requires no significant incremental capital investment.[74]

Hence, the relevant factual issue remains what it was in the 1996-97 UNE litigation: how likely is facilities-based entry, the only form of competition that could, even in

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[72] VERIZON Exh. 112 (Vander Weide Reb.) at 36-37.

[73] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 31-32; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 28 (citing Commission).

[74] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 29-30.

theory, threaten Verizon's wholesale business? The record in this proceeding makes clear that significant facilities-based entry is unlikely in the foreseeable future. As in the past, as in the past, network elements are likely to remain "bottleneck, monopoly services" without "significant competition."[75]

The reality is that effective facilities-based competition for Verizon's wholesale services is as remote as it was five years ago, when Congress enacted the Telecommunications Act of 1996. The share of local lines served by CLECs has stalled in the single digits, and most of this competitive "diversion" has occurred through resale or the purchase of UNEs (neither of which displaces the incumbent as the wholesale supplier of UNEs), not facilities-based entry. Annualized wholesale line losses to the CLECs dropped to 2.2 percent in the first quarter of 2001, down from 2.8 percent in the second quarter of 2000.[76] Today, the competitive LEC industry now stands on the verge of collapse. Its outside funding has dried up, and its financial wreckage litters the bankruptcy dockets.[77] The incumbent LECs, "with their seemingly impenetrable local-service fortresses, are emerging as the hands-down winners."[78] Barriers to entry remain "great," for new entrants "have to either gain access to last-mile end-customer line

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[75] *Local Competition Order,* ¶ 702; AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 42-43; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 20-21.

[76] AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 26-27; Jonathan R. Laing, "The Bell's Toll: New aggressiveness and a friendly deregulatory environment bode well for the Baby Bells," *Barron's* (June 4, 2001) at 19-20.

[77] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 17-31; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 24-35; AT&T-WCOM Exh. 20 (Murray Surreb.) at 13-17. *Value Line*, an investment handbook repeatedly cited by Dr. Vander Weide, has likewise noted that start-up CLECs "are in financial trouble, with the capital markets having dried up over the past 12 months." *Value Line Investment Survey* 720 (Oct. 5, 2001) (AT&T Exh. 108).

[78] R. Farzad, *Has the Telecom War Been Won?* Dow Jones News Service, May 15, 2001; S. Schiesel, *Sitting Pretty: How Baby Bells May Conquer Their World*, N.Y. Times, Apr. 22, 2001, at Money & Business 1.

connections owned by the RBOCs or build asset-based systems at a considerable cost."[79] While an eventual turnaround is a theoretical possibility, the CLEC sector is unlikely ever to make sufficient inroads to prevent continued growth in the ILEC customer base. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 27.

Significantly, even Dr. Vander Weide agreed on cross-examination that the facilities-based CLEC sector is unlikely to make significant competitive inroads into Verizon's business in Virginia for the foreseeable future. Tr. 352-28, 3545-47 (Vander Weide) Although he understandably chose to attribute the problem to UNE pricing standards rather than the entry barriers enjoyed by Verizon and its peers, he agreed that "the competitive threat posed by facilities-based entry is likely to be modest" unless the current regulatory environment changes greatly. Tr. 3526.

Nor does Verizon's own management view CLEC entry as a grave competitive threat. *See* AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 21-23. Indeed, the company has explained that "virtually all the competition in the local consumer marketplace travels over our networks today . . . our wholesale business will grow this year at close to double digit rates, and even lost market share translates into more traffic for our network." Bell Atlantic Investor Quarterly 4Q 1999, January 24, 2000 at 17.

The Form 10-K Annual Report of Verizon Communications Inc. for the calendar year 2000, filed only seven months ago, offers an equally glowing portrayal of Verizon's local business:

> Growth in local service revenues of $768 million, or 3.7% in 2000 and $640 million, or 3.2% in 1999 was driven by higher usage of our network facilities. This growth, generated in part by an increase in access lines in service in each year, reflects strong customer demand and usage of our data transport and digital services.

[79] *Value Line*, *supra*, at 720.

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> Our network access revenues grew $315 million, or 2.5% in 2000 and $393 million, or 3.2%, in 1999. This growth was mainly attributable to higher customer demand, primarily for special access services that grew approximately 36% in both 2000 and 1999. This volume growth reflects a continuing expansion of the business market, particularly for high-capacity, high-speed digital services. Growth in access minutes of use and higher revenues received from customers for the recovery of local number portability also contributed to network access revenue growth in both years.

Verizon Form 10-K for 2000 at F-8 and F-9. In short, the prospect that facilities-based local competition will someday pose a significant threat to Verizon's business of supplying UNEs at wholesale remains as far-fetched as ever.

5. The Telecom Holding Companies Used By Mr. Hirshleifer Are A Better DCF Comparison Group Than The Diversified Industrial Companies Used By Dr. Vander Weide.

A valid DCF equity analysis requires the use of a comparison group consisting of other companies that are comparable in business risk to the company being analyzed.[80] Because no wholesale suppliers of UNEs are publicly traded as stand-alone companies, AT&T witness Hirshleifer used a proxy group of four large telecommunications holding companies ("THCs") whose operations consist primarily of the local telecommunications business.[81]

Dr. Vander Weide, while conceding that the cost of equity capital is largely a function of risk, performed his primary DCF analysis on a subset of approximately 110 firms selected from the 400 firms in the S&P Industrial list. This group includes such diverse firms as automobile manufacturers, oil companies, producers of food and food ingredients, publishing

[80] AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 17-18; AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 17-18.

[81] AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 4, 7, 18-19 & Att. JH-2.

and entertainment companies and pharmaceutical giants.[82] These firms unquestionably have *different* business risks from a local telecommunications provider. Moreover, the average risk of these businesses is clearly greater than the risk of the wholesale business of supplying unbundled network elements, and the returns demanded by equity investors are correspondingly greater as well.[83]

Unsurprisingly, Dr. Vander Weide's analysis has been rejected by the FCC, state commissions and the courts.[84] For example, Dr. Vander Weide proposed the use of the S&P 500 to verify the reasonableness of the USTA cost of equity estimate in the FCC's access charge rate represcription proceeding completed in 1990.[85] The FCC properly rejected the use of Dr. Vander Weide's index approach in the 1990 proceeding.[86]

Likewise, the federal District Court in Delaware, upholding the decision of the Delaware PSC to reject Dr. Vander Weide's DCF analysis in the 1997 UNE proceeding in that state, quoted last year with approval the following findings of the Delaware PSC:

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[82] VERIZON Exh. 112 (Vander Weide Reb.) at 38-39 & Schedule 7.

[83] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 17-18.

[84] AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 33 n. 38. *See, e.g.,* findings and Recommendations of Hearing Examiners, Delaware PSC Docket No. 96-324, ¶ 68 (adopting 10.28 percent cost of capital), *aff'd*, Order No. 4542, ¶ 29 (Del. PSC, July 8, 1997), *aff'd sub nom. Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 239-241 (D. Del. 2000); Order, Case No. PUC970005, at 11 (Va. SCC, May 22, 1998), at 6 (10.12 percent rate adopted); Order, Case No. 8731, at 29 (Md. PSC, Sept. 22, 1997) (10.1 percent rate adopted).

[85] "Bell Atlantic asserts that because the S&P 500 is a group of large industrial firms, it is an excellent benchmark for determining the interstate access cost of equity and can be used to verify the reasonableness of the results of the USTA cluster analysis. USTA argues that the S&P 400 is a proxy for the competitive marketplace." FCC Order 90-315, *In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers*, CC Docket No. 89-624, September 19, 1990, ¶144, p. 7524.

[86] *Id.* at ¶ 162.

> The [Delaware PSC Hearing] Examiners also discounted Vander Weide's analysis because he based his cost of equity calculation on the assumption that Bell's business was as risky as that of the Standard & Poor's ("S&P") 300 industrial firms. . . . Because these S&P firms employ a variety of technologies and enjoy a wide array of market shares, the Hearing Examiners concluded that the risks faced by these firms said little about the risk Bell faced in the market for unbundled network elements. . . . Instead, they accepted AT&T's assessment of Bell's risk, which it premised upon the risk experienced by other telephone holding companies.

Bell Atlantic-Delaware, Inc. v. McMahon, 80 F.Supp.2d 218, 241 (D.Del. 2000) (citations omitted).

Even Bell Atlantic (now Verizon) has rejected Dr. Vander Weide's approach in its own securities filings. As part of its proposed merger with GTE, Bell Atlantic submitted to its shareholders a joint proxy statement/prospectus in which GTE's financial advisors used a comparison group of "Regional Bell Holding Companies" consisting of most of the same companies used in Mr. Hirshleifer's analysis.[87] Bell Atlantic and GTE did *not* compare their companies the S&P 400 industrials, or any other diversified group of non-telephone companies. Likewise, major brokerage firms and investment banks that issue reports for Bell Atlantic and GTE view other local telephone holding companies as the best proxies for Bell Atlantic and GTE.[88]

Dr. Vander Weide's main argument for using the S&P 400 group in this case is that local telephone companies can expect to face significantly more competitive risk in the future. As discussed above, this claim is unfounded. Even if it were correct, however, it would provide no reason not to use a DCF group composed of local telephone holding companies, whose stock prices reflect investor expectations about future competitive risks, as well as current

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[87] *Id.*

[88] *Id.*

risks. Verizon has offered no evidence that it faces greater competitive threats or pressures than do the local operating arms of the telephone holding companies in Mr. Hirshleifer's comparison group. Moreover, there is no reason to believe that such would be the case; the major regulatory and commercial trends affecting the United States telephone industry occur on a national, not local or regional scale. The recent industry trends discussed by Dr. Vander Weide have been widely reported in the financial press, and thus are presumably known to investors and reflected in the stock prices of the publicly-traded telephone companies included in Mr. Hirshleifer's DCF comparison group.[89]

Furthermore, Dr. Vander Weide's assumption that Verizon faces the same intensity of competition as the average company in the S&P 400 because both are "competitive" is grossly simplistic. The degree of competitive risk is a continuum. McDonalds Corporation and a neighborhood sandwich shop both face significant competition for their services, yet the former business is obviously far less risky than the latter. On cross-examination in the recent UNE proceeding before the New Jersey BPU, Dr. Vander Weide admitted that the risk of Verizon could as high as the 70th percentile of risk among the companies in the S&P 400, or as low as the 30th percentile. 1 New Jersey UNE Tr. (11/28/00) 122 (Vander Weide). If the risk facing Verizon were "at either extreme," then use of the S&P Industrials as a proxy for Verizon would correspondingly overstate or understate its risk. *Id.* at 122-23. Where, then, does Verizon fit in the continuum of the S&P Industrials? "Nobody knows for sure." *Id.* at 123-24.

Dr. Vander Weide also defends the use of the S&P 400 comparison group on the theory that

> The DCF and CAPM Models provide more uncertain estimates of the cost of equity for companies such as the holding companies

[89] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at 24, 27; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 27.

> that are experiencing radical restructuring and profound regulatory, organizational and technological change.

Verizon Exh. 112 (Vander Weide Reb.) at 37-38. Dr. Vander Weide apparently means by this elliptical statement that the local telephone industry is undergoing too much merger activity and technological change for reliable risk data to develop. These claims are unfounded.

First, there is no evidence in this case that the imminent prospect of further mergers in the telephone industry is artificially depressing the computed cost of capital of telephone holding companies. Dr. Vander Weide's theory appears to be that a merger announcement drives up the price of stock in anticipation of merger synergies or cost savings not yet reflected in earnings projections; during the interval between the rise in the stock price and the upward revision of analysts' earnings projections, the implicit cost of capital appears to fall. But the effects of merger announcements on stock prices are complex. Prices can fall, not rise, when investors believe that the acquiring company is overpaying for its target, or that one company is getting an unfavorable exchange ratio, or that the merger is unlikely to be consummated, or that antitrust authorities or regulators are likely to impose costly and onerous merger conditions.[90] In fact, falling stock prices have been the rule, not the exception, after most recent merger announcements between telephone companies were announced.[91] Significantly, Dr. Vander Weide made no attempt to screen out likely or announced merger candidates from the companies in *his* DCF group of S&P Industrials.[92]

Equally unfounded is Dr. Vander Weide's attempt to discredit the use of Mr. Hirshleifer's comparison group on the ground that "[t]he DCF and CAPM models [used by Mr.

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[90] AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at pp. 33, 59-62; *accord*, 1 New Jersey UNE Tr. (11/28/00) 106-09 (Vander Weide).

[91] AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 30-31.

[92] AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 32-33.

Hirshleifer] provide understated estimates of the cost of equity for companies such as the THCs that are experiencing radical restructuring and profound regulatory, organizational, and technical change."[93] The argument is nonsensical: Dr. Vander Weide does not claim that Verizon confronts change that is any more or less "radical" than that confronting the telephone companies in Mr. Hirshleifer's DCF comparison group. Absent a showing that potential investors in Verizon are more sensitive to the risk of change than potential investors in the publicly traded holding companies that own Verizon's counterparts in the other 49 states, there is no reason to believe that the risks, if any, of the change facing Verizon have not been fully reflected in the stock prices of the comparison companies.

Finally, Dr. Vander Weide's assertion that the universe of publicly traded local telephone holding companies is too small to provide a statistically reliable sample is without substance. Dr. Vander Weide performed no tests of statistical significance to support this claim. On its face, however, potential dispersion is obviously small.[94] The DCF equity costs of the companies in Mr. Hirshleifer's DCF comparison group all fell within a very narrow range, 10.24 percent to 10.4 percent. Significantly, Dr. Vander Weide has used equally small samples in his own analyses.[95]

6. Dr. Vander Weide's Miscellaneous Criticisms Of Mr. Hirshleifer's DCF Analysis Are Also Without Merit.

Dr. Vander Weide also offers several miscellaneous criticisms of Mr. Hirshleifer's DCF equity analysis. These criticisms concern the proper frequency compounding (annual vs. quarterly), the appropriateness of including a flotation cost allowance for equity, and

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[93] VERIZON Exh. 112 (Vander Weide Reb.) at 37.

[94] AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 31-32.

[95] AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 33-35.

other details. Verizon Exh. 112 (Vander Weide Reb.) at 40-42, 47-49. For the reasons explained in Mr. Hirshleifer's rebuttal testimony, these criticisms are either unfounded or lacking any significant effect. AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 36-37; 12 Tr. 3635-37 (Hirshleifer) (explaining basis for assumption of quarterly compounding).

7. Dr. Vander Weide's Criticisms Of AT&T's CAPM Approach Are Without Merit.

As a check on his DCF equity analysis, Mr. Hirshleifer also performed an alternative analysis of the cost of equity based on the capital asset pricing model ("CAPM"). He explains the CAPM analysis in his direct testimony, and responds to Dr. Vander Weide's criticisms of the analysis in his rebuttal testimony. AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 20-33; AT&T-WCOM Exh. 17 (Hirshleifer Surreb.) at 38-42 (appropriate measure of betas); *id.* at 42-53 (appropriate equity risk premium).

8. Mr. Hirshleifer Has Specified The Appropriate Capital Structure.

The appropriate capital structure (*i.e.*, assumed debt/equity ratio) should reflect the efficient forward-looking market-weighted capital structure of a firm in the appropriate line of business. AT&T-WCOM Exh. 10 (Hirshleifer Reb.) at p. 83. Dr. Vander Weide, while also professing to embrace this standard, proposed a capital structure that is far more heavily weighted with equity, and thus far more costly than the capital structure proposed by Mr. Hirshleifer. *Cf.* AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 38-39 (proposing capital structure of 34.5 percent debt and 65.5 percent equity); Verizon Exh. 104 (Vander Weide Dir.) at 48 (proposing capital structure consisting of 25 percent debt and 75 percent equity).

Both Dr. Vander Weide and Mr. Hirshleifer agree that the efficient target market weighting depends on the risk of the firm's line of business: the more risky the business, the more equity and the less debt is appropriate. *See* AT&T-WCOM Exh. 5 (Hirshleifer Dir.) at 41-